UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/549,827 | 04/14/2000 | Andrey Rzhetsky | A31869-A70050.1046 | 8497 |

7590 12/28/2001

Baker Botts L.L.P.
30 Rockefeller Plaza
New York, NY 10112

| EXAMINER |
|---|
| ZHOU, SHUBO |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1631 | 13 |

DATE MAILED: 12/28/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

| Offic Action Summary | Application No. 09/549,827 | Applicant(s) RZHETSKY ET AL. | |
|---|---|---|---|
| | Examiner Shubo "Joe" Zhou | Art Unit 1631 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *1-10 and 22-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Election/Amendments*

Applicants' election, with traverse, of Group III (claims 11-21) and amendments in Paper # 7, filed 7/5/01/01, are acknowledged and amendments entered.

Applicants' traverse is on the ground that claims of Groups III and IV are conceptually linked and would not require separate searches. This is not found persuasive because the claims in Group III and those in Group IV are drawn to patentably distinct subject matter and belong to different patent classification. Further, the system of Group IV can be used in different processes. Searching for divergent subject matter and different classification certainly requires different search strategies and co-examination would certainly impose undue search burden to the Office. Thus, the restriction requirement is still deemed proper and is made FINAL.

Accordingly, claims 1-32 are currently pending, claims 11-21 are under examination, and claims 11-10, and 22-32 are withdrawn from further consideration as being drawn to non-elected inventions.

### *Priority*

It is brought to applicants' attention that for the purpose of examination, priority has not been granted to the claimed provisional application 60/129,469 and non-provisional application 09/327,983 because the instantly elected invention is not found to have been disclosed in the applications.

***Specification***

The specification is objected to because of the following:

The disclosure contains embedded hyperlinks and/or other forms or browser-executable codes. Such code is present in the specification at page 66, and elsewhere. Applicants are required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP 608.01.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the elected claims are directed. The title is directed to gene discovery through comparisons of networks of structural and functional relationships among known genes and proteins, whereas the elected invention is directed to methods for extracting information on interactions between biological entities from natural-language text data.

Note the attached Notice of Draftsperson's Patent Drawing Review. Applicants are hereby notified that the required timing for the correction of drawings has changed. See the last 6 lines on the sheet which is attached entitled "Attachment for PTO-948 (Rev. 03/01 or earlier)". Applicants are required to submit drawing corrections within the time period set for responding to this Office action. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully respond to this Office action.

It is noted that this application appears to claim subject matter disclosed in prior co-pending Application 60/129,469, filed 4/15/1999, and 09/327,983, filed 6/8/1999. A reference to the prior application(s) must be inserted as the first sentence of the

specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a). Also, the current status of all non-provisional parent applications referenced should be included.

***Claim Rejections-35 USC § 112***

The following is a quotation of the **second** paragraph of 35 U.S.C. 112:

**The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

Claims 11-21 are rejected under 35 U.S.C. 112 , second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preambles of claim 11 and its dependent claims 13-21 recite "a method for extracting information on interactions between biological entities" but the method steps do not accomplish such and not involve in biological entities, which leave unclear what other steps are needed in order to use the method for the extraction, which therefore leaves it unclear of the metes and bounds of the claims.

The phrase "regularizing the parsed text data" in claim 11 and all its dependent claims is vague and indefinite. It is not clear what is meant by regularizing a text data due to the absence of clear definition for the phrase in the specification. Since "regularize" generally means "to make regular; cause to conform" (The American Heritage Dictionary of the English Language, http://www.bartleby.com/61/80/R0128000.html), "regularizing the parsed text data" could mean putting the parsed data into groups, putting them into a text like the original unparsed text, etc.

The phrase "natural language" in claim 11 and all its dependent claims is vague and indefinite. It is not clear what is meant by natural language due to the absence of clear definition for the phrase in the specification. Is natural language "non-artificial", such as the English language? However, all languages are artificial because they are made/created by man.

The phrase "undefined words" in claim 17 is vague and indefinite. What are undefined words in a text data such as a biological text data? Are words defined by biological function or meaning in the general usage? If the latter is true, all words are defined in various dictionaries.

The phrase "binary actions" in claim 18 is vague and indefinite. It is not clear what is meant by binary action. First of all, a text data does not have action and parsing a text data does not involve action either. Secondly, how is action defined in a biological text data, by biological action/function of a particular term such as protein, or by the term's grammatical function?

The phrase "when parsing of the text data is unsuccessful" in claim 19 is vague and indefinite. Claim 19 depends from claim 11, which contains the steps of "parsing" and "regularizing" and does not contain "unsuccessful" parsing. Thus, "parsing of the text data is unsuccessful" lacks clear antecedent basis.

The phrase "said tagging step" in claim 21 lacks clear antecedent basis.

Clarification of the metes and bounds of the claims is requested.

***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis

added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 11, 13-21 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-3, 5, 7, and 9-16 of prior U.S. Patent No. 6,182,029. This is a double patenting rejection.

Claims 11, 13-21 of the instant application and claims 1-3, 5, 7, and 9-16 of prior U.S. Patent No. 6,182,029 are directed to the same invention: method for extracting information from natural-language text data including steps in the same scope. It is noted that while the preambles of claims 11, 13-21 of the instant application recite "extracting information on interactions between biological entities from natural-language text data", yet the actual method steps do not involve at all "biological entities". Thus, the limitation bears no weight in the process of examination by the Examiner.

### *Claim Rejections-35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

**A person shall be entitled to a patent unless –**

**(e) the inv ntion was described in a patent grant d on an application for patent by another filed in the United States before the invention thereof by th applicant for patent, or on an international applicati n by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

**(f) he did not himself invent the subject matter sought to be patented.**

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 11, 13-21 are rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Friedman C. (US patent No. 6,182,029, Date of Patent: Jan. 30, 2001, Filed: Aug. 6, 1999).

As set forth in the previous section, Claims 11, 13-21 of the instant application and claims 1-3, 5, 7, and 9-16 of Friedman C. are directed to the same invention: method for extracting information from natural-language text data including steps in the same scope. Although the preambles of claims 11, 13-21 of the instant application recite "extracting information on interactions between biological entities from natural-language text data", the actual method steps do not involve at all "biological entities". Thus, the limitation bears no weight in the process of examination.

Claims 11, 13-21 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter.

As set forth above, Friedman C. (US patent No. 6,182,029, Date of Patent: Jan. 30, 2001, Filed: Aug. 6, 1999) invented the method for extracting information from natural-language text data including steps in the same scope as the steps of the method

in claims 11, 13-21 of the instant application. Although the preambles of claims 11, 13-21 of the instant application recite "extracting information on interactions between biological entities from natural-language text data", the actual method steps do not involve at all "biological entities". Thus, the limitation bears no weight in the process of examination.

Claims 11, 13-21 are directed to the same invention as that of claims 1-3, 5, 7, and 9-16 of the commonly assigned US patent No. 6,182,029. The issue of priority under 35 U.S.C. 102(g) and possibly 35 U.S.C. 102(f) of this single invention must be resolved.

Since the Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302), the assignee is required to state which entity is the prior inventor of the conflicting subject matter. A terminal disclaimer has no effect in this situation since the basis for refusing more than one patent is priority of invention under 35 U.S.C. 102(f) or (g) and not an extension of monopoly.

Failure to comply with this requirement will result in a holding of abandonment of this application.

### *Claim Rejections-35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **A patent may not be obtained though the invention is not identically disclosed or described as set f rth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that th subject matter as a whole would have been obvious**

**at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman C. (US patent No. 6,182,029, Date of Patent: Jan. 30, 2001, Filed: Aug. 6, 1999).

As set forth above, Friedman C. disclose methods for extracting information from natural-language text data comprising parsing the text data, preprocessing the data prior to parsing and regularizing the parsed data (see columns 5, and 16-17). Friedman also suggests/motivates application of the extraction method in "extracting medical/clinical data from physician reports and genomics-related information from electronic text records" (column 4). It would have been well-known that genomics-related information is biological information. Further, Friedman actually uses such entities in a text as "proteins", "genes" and "activate" as examples to demonstrate how parsing works (column 6), and it would have been well-known that these entities are biological entities, as required in the instant claim 12. Thus, it would have been obvious

to one having ordinary skill in the art at the time the claimed invention was made to combine the teachings and/or suggestions/motivations of Friedman and what would have been well-known to make and use the invention because identifying biological entities such as "proteins", "genes" and "activate" in parsing is actually taught or suggested by Friendman . There would have been a reasonable expectation of success because the combination of both references teaches/suggests all the limitations of the instant invention with great details.

Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, K. H. (Comparative Molecular Field Analysis (CoMFA), 1995).

Kim reviews the state of art in the field of comparative molecular field analysis (CoMFA) combining a great number of references, i.e. text data, and involving many biological entities, e.g. receptor molecule (see page 29, second and third paragraphs, and pages 323-324). It would have been obvious to one of ordinary skill in the art that in the process of preparing for the review article, Kim must have parsed each reference, i.e. read the reference article word by word, phrase by phrase, sentence by sentence and paragraph by paragraph and eventually regularized the parsed text data, i.e. formed the final version of the review article.

Note that due to the broad scope of claims 11-21 and the indefiniteness of some of the phrases as set forth in the previous sections, the instant claims are even unpatentable oven any ordinary reading and analyzing of any language text. Thus, there are plethora of prior art references and the cited Kim is only an example.

***Conclusion***

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to:
Shubo "Joe" Zhou, Ph.D., whose telephone number is (703) 605-1158. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst Tina Plunkett whose telephone number is 703)-305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

S. "Joe" Zhou, Ph.D.

Patent Examiner

MICHAEL BORIN, PH.D
PRIMARY EXAMINER